

MassDEP RTN 4-18143

DRAFT Release Abatement Measure Plan Modification

Former Scituate Proving Ground, 137 Hatherly Road,
Scituate, Massachusetts

Submitted to:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup
Southeast Regional Office
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Submitted by:

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Project 1701819

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Executive Summary

On behalf of Toll Brothers, Inc. (Toll Brothers), GEI Consultants, Inc. (GEI) is submitting this Release Abatement Measure (RAM) Plan for the excavation and off-site disposal of soil, and management of groundwater at the Massachusetts Department of Environmental Protection (MassDEP) disposal site located at 137 Hatherly Road Street in Scituate, Massachusetts (the Site). MassDEP assigned Release Tracking Number (RTN) 4-18143 to the Site.

The Site consists of an approximately 15-acre portion of the 115-acre parcel of land known as the former Scituate Proving Grounds in Scituate, Massachusetts. The former Scituate Proving Grounds property (the Property) is bisected by Hatherly Road, with 65 acres located south of Hatherly Road and 50 acres located north of Hatherly Road. The Site is located within the 65-acre portion on the southern side of Hatherly Road and is part of the future location of the proposed Seaside at Scituate residential development.

Two releases have been reported for the Site. RTN 4-18143 was issued in April 2004 after an inspection of the Former Proving Grounds Property on behalf of MassDEP by Shaw Group, Inc. (Shaw) due to its listing as a Formerly Used Defense Site (FUDS). Shaw identified 14 Areas of Concern (AOCs) and conducted limited soil sampling activities at each AOC. Soil samples were analyzed for metals, extractable petroleum hydrocarbons (EPH), semi-volatile organic compounds (SVOCs) and explosives. Only petroleum constituents were detected above MassDEP Reportable Concentrations. It was concluded that the petroleum impacts originated from the usage and processing of white oils as a fiber lubricant by the George Goulston Company and not from former military usage. The white oil release was investigated and remediated by multiple consultants on behalf of the property owner between 2004 and 2011. A Permanent Solution with No Conditions (formally known as a Class A2 Response Action Outcome [RAO]) was submitted for the Site in December 2011. The Permanent Solution Statement documented that soil excavation activities effectively remediated the white oil release and a condition of No Significant Risk exists at the Site.

RTN 4-18656 was issued for a disposal area identified by Shaw as part of the inspection at the Former Proving Grounds Property in April 2004. In November 2005, GZA Environmental, Inc. (GZA) conducted remediation of the disposal area under an Immediate Response Action (IRA) Plan that included the removal of buried drums and the excavation and disposal of approximately 444 tons of soil. GZA collected post excavation soil and groundwater samples in the area of the excavation. The IRA was closed with an IRA Completion Report and RTN 4-18656 was linked to RTN 4-18143.

In January 2014, CHA Consulting, Inc. (CHA) performed an ASTM Phase II Environmental Site Assessment (ESA) subsurface investigation at the Property on behalf of Toll Brothers for property transfer negotiations. Based on the results of the subsurface investigations, CHA identified concentrations of volatile organic compounds (VOCs), SVOCs, volatile petroleum hydrocarbons (VPH), EPH, polyaromatic hydrocarbons (PAHs) and metals in soil in four AOCs that exceeded the applicable Massachusetts Contingency Plan (MCP) Reportable Concentration (RC) S-1 and/or Method 1 standards.

The MCP provides an exemption for reporting contaminant concentrations, that would otherwise require reporting, if a Permanent Solution Statement has been submitted for the site and the newly encountered contaminant conditions would not change the determinations made in the regulatory closure opinion (310 CMR 40.0317[17]). This exemption is applicable to the Site, and it is protective of human health because it relieves a Responsible Party from re-reporting conditions that are consistent with conditions that have already been reported and addressed under the MCP. It is GEI's opinion that the conditions encountered by CHA during the ASTM Phase II investigations meet the criteria for this exemption.

However, following its acquisition of the property, Toll Brothers is electing to submit a new Release Notification Form to MassDEP that presents the results of CHA's investigation. This will result in MassDEP's issuance of a new Release Tracking Number for the newly reported condition. This RAM Plan will be issued under the new RTN.

The RAM Plan includes the following activities:

- Excavation limits and disposal pre-characterization
- Soil excavation and off-site disposal.
- Air monitoring.
- Soil handling.
- Soil screening and additional characterization.
- Additional site assessment, if necessary.
- Dewatering and groundwater management.
- Abandonment of fresh and salt water supply wells.

1. Introduction

On behalf of Toll Brothers, Inc. (Toll Brothers), GEI Consultants, Inc. (GEI) is submitting this Release Abatement Measure (RAM) Plan for the excavation and off-site disposal of soil, and management of groundwater, at the Massachusetts Department of Environmental Protection (MassDEP) disposal site located at 137 Hatherly Road, Scituate, Massachusetts (the Site; Figs. 1 and 2), and assigned Release Tracking Number (RTN) 4-18143. This RAM Plan was prepared in accordance with the requirements of the Massachusetts Contingency Plan (MCP), 310 CMR 40.0440.

The original MassDEP RAM Transmittal Form (BWSC106) was submitted electronically and a copy is in Appendix A. The required public notice letters have been sent to the Chief Municipal Officer and Board of Health and copies are in Appendix B. A RAM Transmittal fee is not required because the Site has achieved a Permanent Solution.

1.1 Background

Two releases have been reported for the Site. RTN 4-18143 was issued in April 2004 after an inspection of the Former Proving Ground Property on behalf of MassDEP by Shaw Group, Inc. (Shaw) due to its listing as a Formerly Used Defense Site (FUDS). Shaw identified 14 Areas of Concern (AOCs) and conducted limited soil sampling activities in each area. Soil samples were analyzed for metals, extractable petroleum hydrocarbons (EPH), semi-volatile organic compounds (SVOCs) and explosives. Only petroleum constituents were detected above MassDEP Reportable Concentrations. It was concluded that the petroleum impacts originated from the usage and processing of white oils as a fiber lubricant by the George Goulston Company and not from former military usage. The white oil release was investigated and remediated by multiple consultants on behalf of the property owner between 2004 and 2011. As part of Phase IV activities, approximately 450 tons of white oil impacted soil was removed from the Site. A Permanent Solution with No Conditions (formally known as a Class A2 Response Action Outcome [RAO]) was submitted for the Site in December 2011. The Permanent Solution Statement documented that soil excavation activities effectively remediated the white oil release and a condition of No Significant Risk exists at the Site.

RTN 4-18656 was issued for a disposal area identified by Shaw as part of the inspection at the Former Proving Ground Property in April 2004. In November 2005, GZA Environmental, Inc. (GZA) conducted remediation of the disposal area under an Immediate Response Action (IRA) Plan that included the removal of buried drums and the excavation and disposal of approximately 444 tons of soil. GZA collected post excavation soil and

groundwater samples in the area of the excavation. The IRA was closed with an IRA Completion Report and RTN 4-18656 was linked to RTN 4-18143.

The disposal site boundaries for both RTNs are shown on Fig. 2.

In January 2014, CHA Consulting, Inc. (CHA) performed an ASTM Phase II Environmental Site Assessment (ESA) subsurface investigation at the Property on behalf of Toll Brothers for property transfer negotiations. The subsurface investigation activities included test pit excavation, soil boring advancement and groundwater monitoring well installation and collection of surficial soil, subsurface soil and groundwater samples. Based on the results of the subsurface investigations, CHA identified concentrations of volatile organic compounds (VOCs), SVOCs, volatile petroleum hydrocarbons (VPH), EPH, polyaromatic hydrocarbons (PAHs) and metals in soil in four AOCs that exceeded the applicable MCP Reportable Concentration (RC) RCS-1 and/or Method 1 standards. CHA identified concentrations of pyrene and lead in groundwater that exceeded the applicable MCP RCGW-2 and/or Method 1 standard, however, these detections were attributed to sample matrix interference and therefore, are not representative of Site conditions. Based on our review of the data and CHA's description of sample conditions, we agree that the concentrations of pyrene and lead identified by CHA were caused by sample matrix interference. Data tables summarizing the soil and groundwater results of the subsurface investigations are included in Appendix C and locations of the subsurface investigations are shown on the CHA figures included in Appendix D. The AOCs are shown on Fig. 3.

The MCP provides an exemption for reporting contaminant concentrations, that would otherwise require reporting, if a Permanent Solution Statement has been submitted for the site and the newly encountered contaminant conditions would not change the determinations made in the regulatory closure opinion (310 CMR 40.0317[17]). This exemption is applicable to the Site, and it is protective of human health because it relieves a Responsible Party from re-reporting conditions that are consistent with conditions that have already been reported and addressed under the MCP. It is GEI's opinion that the conditions encountered by CHA during their ASTM Phase II investigations meet the criteria for this exemption.

Although reporting and remediation of the four AOCs are not required under the MCP, Toll Brothers is electing to report their plans to excavate soil from within the AOCs where individual data points exceed MCP RCS-1 or Method 1 standards in advance of a residential redevelopment of the Property. Proposed areas of excavation are shown on Fig. 3.

As described in 310 CMR 40.1067(3)(b), no documentation for remedial actions is required for sites that have achieved regulatory closure with a Permanent Solution with No Conditions, however, documentation may be submitted voluntarily. Toll Brothers is voluntarily submitting this RAM Plan for the management of contaminated soil that will be encountered

during excavation of the AOCs prior to construction of the Seaside at Scituate residential development.

The RAM Plan includes the following activities:

- Excavation limits and disposal pre-characterization
- Soil excavation and off-site disposal.
- Air monitoring.
- Soil handling.
- Soil screening and additional characterization.
- Additional site assessment, if necessary.
- Dewatering and groundwater management.
- Abandonment of fresh and salt water supply wells.

These activities are discussed further in Section 4.

2. Contact Information (310 CMR 40.0444[1][a])

2.1 Responsibility for the RAM

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2.2 Licensed Site Professional (LSP) for the RAM

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3. Description of Release, Site Conditions, and Surrounding Receptors (310 CMR 40.0444[1][b])

3.1 Site History and Release Description

Based on a review of available historical sources, the Site was developed around 1918 for use as a military base. Between 1921 and the 1980s, the Site was occupied by the George Goulston Company for manufacturing of white oils. The Site was also used by several short-wave radio stations between 1927 and 1976. The historical use of the Site for the manufacturing of white oils is the primary source of releases at the Site.

3.2 Site Description

The Site consists of an approximately 15-acre portion of the 115-acre parcel of land known as the former Scituate Proving Grounds in Scituate, Massachusetts. The former Scituate Proving Grounds property (the Property) is bisected by Hatherly Road, with 65 acres located south of Hatherly Road and 50 acres located north of Hatherly Road. The Site is located within the 65-acre portion on the southern side of Hatherly Road and is part of the future location of the proposed Seaside at Scituate residential development (Fig. 2).

3.3 Surrounding Receptors

The Site is located in Scituate, Massachusetts. Potential human receptors include construction and utility workers under current and future uses, as well as residential occupants under future use. Possible trespassers are also potential human receptors during the planned excavation activities (from fugitive dust and/or direct contact).

Based on the MassGIS map, we have not identified any sensitive environmental receptors within 500 feet of the Site. The Site is not located within a MassDEP-approved Wellhead Protection Area (Zone II Area), MassDEP Interim Wellhead Protection Area (IWPA), or potentially productive aquifer (PPA), and no public water supplies or private drinking water wells are located within 500 feet of the Site.

Town records do not identify public supply or private drinking water wells at the Site. However, as part of its Phase II ESA, CHA stated that fresh and salt water supply wells were formerly located at the Site. The locations of the wells, if still present, were not identified by CHA. These wells will be decommissioned if they are located during the redevelopment effort. Additional information is provided in Section 4.3.9.

4. RAM Objectives, Plan, and Schedule (310 CMR 40.0444[1][c])

4.1 Objectives

The objective of this RAM Plan is to manage contaminated soil with concentrations greater than MCP RCS-1 or Method 1 standards in advance of a residential redevelopment of the Property. The RAM Plan has been developed to be protective of construction workers during direct contact with potentially contaminated soil, surrounding receptors, and future occupants at the proposed Seaside at Scituate development.

4.2 Project Description

The planned depth and extent of excavation at each AOC varies and are further described in Sections 4.2.1 through 4.2.4 below. Proposed areas of excavation are shown on Fig. 3.

4.2.1 AOC 1 – White Oil

AOC 1 is related to the former release of white oil identified adjacent to and west of the Main Building. Concentrations of EPH and target analytes were detected within the area above applicable RCS-1 and/or Method 1 S-1 standards in samples ENV-3, ENV-207, ENV-210 and ENV-212. Soil will be excavated to a depth of 4 feet within AOC 1 and the limits of excavation will include sample locations that exceed applicable RCS-1 and/or Method 1 S-1 standards. Based on our current estimate of extent, approximately 1,303 cubic yards of soil will be excavated from AOC 1.

4.2.2 AOC 2 – Lead and Polycyclic Aromatic Hydrocarbons (PAHs) in Shallow Soil

AOC 2 was delineated around the detection of lead and PAHs above applicable Reportable Concentrations (RCs) in shallow soil samples collected from the north side of Hatherly Road. This AOC is located outside the disposal site boundary (Fig. 3). Concentrations of EPH and target analytes were detected in two samples (CHA-103 and CHA-305), concentrations of lead were detected in three samples (CHA-102, CHA-103 and CHA-104) and concentrations of VOCs and SVOCs were detected in one sample (CHA-103) above applicable RCS-1 and/or Method 1 S-1 standards. CHA, their ASTM Phase II, opined that these detections are exempt from reporting under the MCP in accordance with 40.0317(8)(a) and 40.0317(9) and are attributable to wood ash and paint chips observed near the building foundations. GEI agrees that these detections are not reportable under the MCP and therefore an extension of the Site boundary is not warranted. However, soil will be excavated to a depth of 1 foot

within AOC 2 and the limits of excavation will include sample locations that exceed applicable RCS-1 and/or Method 1 S-1 standards. Based on our current estimate of extent, approximately 340 cubic yards of soil will be excavated from AOC 2.

4.2.3 AOC 3 - Aboveground Storage Tank (AST) behind Railroad Building

AOC 3 is related to the detection of EPH in shallow soil beneath one of two ASTs behind the Railroad Building. Concentrations of EPH and target compounds were detected in one soil sample collected near the northern of the two ASTs (Tank 2) above applicable RCS-1 and Method 1 S-1 standards. Soil will be excavated to a depth of 2 feet within AOC 3 and limits of excavation will include the sample location that exceeded applicable RCS-1 and Method 1 S-1 standards. Based on our current estimate of extent, approximately 11 cubic yards of soil will be excavated from AOC 3.

4.2.4 AOC 4 – Petroleum Impacted Soil on Northern Side of Sea Moss Building

AOC 4 is related to the detection of EPH in soil on the northern side of the Sea Moss Building. Concentrations of EPH and target compounds were detected in one soil sample (TP1011) above applicable RCS-1 standards. Soil will be excavated to a depth of 13 feet within AOC 4 and limits of excavation will include the sample location that exceeded applicable RCS-1 standards. Based on our current estimate of extent, approximately 48 cubic yards of soil will be excavated from AOC 4.

4.3 Planned RAM Activities

The planned RAM activities include the following:

4.3.1 Excavation limits and disposal pre-characterization

To pre-characterize the extent of excavation within the AOCs, soil samples will be collected from the limits of the proposed areas of excavation shown on Fig. 3 prior to mobilization of excavation equipment. The samples will be collected using Geoprobe drilling equipment or by hand auger, where appropriate. Samples will be submitted to a laboratory for chemical testing consistent with the Contaminants of Concern (COCs) at the specific AOC.

- AOC 1: Soil samples will be collected from the estimated extent of the excavation at a frequency of approximately one sample per 50- linear feet. Similarly, soil samples will be collected from the estimated bottom of the excavation on an approximately 50-foot grid pattern. The confirmatory samples will be analyzed for EPH with target compounds.

- AOC 2: Soil samples will be collected from the estimated extent of the excavation at a frequency of approximately one sample per 50- linear feet. Similarly, soil samples will be collected from the estimated bottom of the excavation on an approximately 50-foot grid pattern. The confirmatory samples will be analyzed for EPH with target compounds and lead. One sample will be collected from the vicinity of CHA-103 for VOCs, SVOCs, EPH with target compounds and lead.
- AOC 3: Due to the relatively small size of the proposed excavation (approximately 15 feet by 10 feet), samples will be collected from each of the four sides of the excavation and one from the bottom. The confirmatory samples will be analyzed for EPH with target compounds.
- AOC 4: Due to the relatively small size of the proposed excavation (approximately 10 feet by 10 feet), samples will be collected from each of the four sides of the excavation and one from the bottom. The confirmatory samples will be analyzed for EPH with target compounds.

If the samples collected from the currently estimated extent of the excavation exceed Method 1 standards, additional sampling may be warranted and the extent of the excavation will be adjusted as necessary. The extent of excavation will be predetermined based on the results of the proposed investigation described above and will allow a load-and-go excavation process. Excavation sidewall and bottom sampling will not be conducted during excavation activities.

During soil sampling program, soil within the proposed excavation area will also be sampled to pre-characterize the soil based on likely disposal facility requirements. Representative soil samples will be collected from each excavation area for disposal parameters including VOCs, SVOCs, total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), Resource Conservation and Recovery Act (RCRA) 8 metals, ignitability, conductivity, corrosivity and reactive cyanide and sulfide at a frequency of one sample per 500 cubic yards. A minimum of one sample will be collected from each proposed excavation area. Several samples will be analyzed for pesticides and herbicides depending on the soil category and selected offsite disposal facility.

Results of the soil pre-characterization program will be documented in RAM Status Report No.1 and will include all data used to determine excavation extents and figures showing final extents of excavations that will be removed as part of RAM activities. The RAM Status Report will also include proposed soil disposal facilities.

4.3.2 Soil excavation and off-site disposal

Up to 2,000 cubic yards of soil may be excavated from the AOCs and disposed of off site as part of remediation. Management of soil as Remediation Waste is further described in Section 5.

4.3.3 Air monitoring

Continuous real-time air monitoring for particulates (dust) and total VOCs (TVOCs) will be conducted at the perimeter of the work area during all ground intrusive activities that result in management of contaminated soil. The system will consist of four perimeters, real-time air monitoring stations that transmit measurements to a data acquisition system. The system will include a paging system to notify the engineer of any exceedance of the alert level or action level. The four locations around the perimeter of the work area will continuously establish upwind background conditions even if wind direction changes. It is anticipated that the stations will be located at each of the four sides of the work area perimeter shown on Fig. 3, however final locations of stations will be selected based on contractor Site layout and one station will always be positioned to collect data representative of downwind conditions. Air monitoring procedures and the derivation of alert and action levels are further discussed in Section 6.

4.3.4 Soil handling

Soil excavated during the AOC excavations will be live loaded into trucks for offsite disposal. If temporary onsite soil stockpiling is necessary, the soil will be stockpiled on a 6-mil-thick, polyethylene barrier or other impervious surface and covered with a 6-mil-thick, polyethylene barrier. The stockpiles will be surrounded by haybale berms.

4.3.5 Soil screening and additional characterization

We will periodically screen material on site as it is excavated. The screening will consist of visual and olfactory observations combined with jar-headspace measurements of VOCs using a photo-ionization detector (PID). If we identify material during excavation as having characteristics inconsistent with those identified during previous investigations, the material will be stockpiled separately and characterized separately.

4.3.6 Additional site assessment, if necessary

Toll Brothers will arrange to have the remainder of the property inspected by the LSP of Record, or his representative, after clearing of vegetation has been completed. The results of that inspection will be reported in a future RAM Status Report or the RAM Completion Report, if appropriate. If drums, containers, or other evidence of hazardous material storage or use are identified in other portions of the property during the inspections or during the redevelopment process following the completion of the RAM, Toll Brothers will arrange to collect samples for chemical analysis to evaluate whether a release to the environment has occurred. The RAM Plan will be modified, if necessary, to include additional soil removal activities in other portions of the property.

4.3.7 Dewatering and groundwater management

Groundwater will likely be encountered during excavation of AOC 1 and AOC 4. Based on the approximate depths of the proposed excavations, groundwater is unlikely to be encountered in AOC 2 and AOC 3. If groundwater is encountered and dewatering of an excavation is required, the dewatering effluent will either be recharged on Site at a hydraulically upgradient location within the Site boundary or temporarily stored onsite and recharged back into the excavation. Groundwater management is further discussed in Section 5.

4.3.8 Abandonment of former fresh and saltwater supply wells

According to CHA, former fresh and saltwater supply wells historically existed at the Site. However, the locations of these wells were not determined during Phase I or Phase II investigations. If encountered during remediation, or during subsequent redevelopment efforts, Toll Brothers will arrange for the decommissioning of the wells by a licensed drilling subcontractor.

4.4 Schedule

The RAM activities will begin following approval of the project by the Town of Scituate.

5. Remediation Waste Management (310 CMR 40.0444[1][d])

5.1 Soil Excavation and Management

Based on our preliminary estimate of excavation extent, we estimate that up to 1,213 cubic yards of soil will be generated during the AOC excavations. In its Phase II report, CHA estimated approximately 1,000 cubic yards of soil would be generated from the AOC excavations. The actual extent and volume of soil requiring excavation will be determined during the proposed soil sampling and pre-characterization program. However, for this RAM Plan, we are requesting approval to manage up to 2,000 cubic yards of soil as Remediation Waste during the RAM. In accordance with 310 CMR 40.0442(5), a letter certifying that Toll Brothers has the financial resources to manage this volume of Remediation Waste is in Appendix E.

Soil excavated during the AOC excavations will be live loaded into trucks for offsite disposal. If temporary onsite soil stockpiling is necessary, the soil will be stockpiled on a 6-mil-thick, polyethylene barrier or other impervious surface and covered with a 6-mil-thick, polyethylene barrier. The stockpiles will be surrounded by haybale berms.

If the soil is a non-hazardous waste, it will be transported under a Bill of Lading (BOL) prepared by the LSP and handled as required by the MCP in 310 CMR 40.0030. In the unlikely event that the soil is a hazardous waste, it will be disposed of appropriately under a Department of Transportation (DOT) Uniform Hazardous Waste Manifest.

The trucks leaving the Site will include load covers to prevent accidental spillage of soil during transport. Rubber track mats will be used to prevent truck tires coming into contact with contaminated soil during live loading. The rubber track mats will also prevent truck tires tracking soil offsite.

5.2 Groundwater Management

Groundwater management may be necessary during excavation. Groundwater is present at depths ranging from approximately 1 to 15 feet below ground surface. The maximum depth of excavation is approximately 12 feet. If groundwater is encountered and dewatering of an excavation is required, the dewatering effluent will either be recharged on Site at a hydraulically upgradient location within the Site boundary or temporarily stored onsite in tanks and recharged back into the excavation after it is completed. These methods are consistent with management procedures described in the MCP.

6. Worker Protection and Environmental Monitoring (310 CMR 40.0444[1][e])

The contractors performing soil excavations will prepare and implement project Health and Safety Plans (HASPs) to protect Site workers from potentially contaminated material. GEI will prepare a HASP for the protection of its workers. Continuous real-time air monitoring for total VOCs (TVOCs) and particulates (dust) will be conducted at the perimeter of the AOC work areas and Property perimeter during all ground intrusive activities that result in management of contaminated soil.

Alert levels and action levels are contaminant concentrations that trigger implementation of measures to mitigate contaminant release conditions. The alert level provides an early warning of particulate concentrations approaching the action level. The alert level is intended to notify the project team and result in initiating mitigation response actions before the action level is reached. An alert level is a contaminant concentration that triggers mitigation response actions. An alert level does not suggest the existence of a health hazard, but serves instead as a screening tool to trigger measures to assist in minimizing potential off-Site transport of contaminants during ground intrusive remedial activities.

The maximum concentrations of volatile contaminants in soil are below the applicable Method 1 S-1 standards. Therefore, volatile contaminants are unlikely to result in a significant inhalation exposure pathway. However, as a conservative measure, TVOC monitoring will be performed. The perimeter action level for total VOCs has been set at 1 ppmV. The alert level has been set at 0.7 ppmV.

Site-specific alert levels and action levels were derived using exposure point concentrations (EPCs) calculated using representative soil sample results from across the Site. Ambient air concentrations (AACs) for PAHs in particulates were evaluated to protect nearby receptors from potential exposure to PAHs in dust. In accordance with “Real-Time Air Monitoring at Construction and Remediation Sites To Estimate Risks of Contaminated Dust Migration” (MassDEP 1997), AACs were developed for benzo(a)pyrene and naphthalene to be protective of “worst case” PAH compounds for the evaluation of carcinogenic effects and non-carcinogenic effects, respectively. AACs were also derived for extractable petroleum hydrocarbons (EPH) and lead, because the maximum concentration of these contaminants exceeded a Method 1 standard, and unlike for PAHs, a suitable surrogate compound is not available. Exposure to particulates for other analytes where the maximum concentration is below the Method 1 S-1 soil standards is unlikely to result in a significant exposure pathway, and therefore, AACs were not derived for those analytes. AACs were derived assuming a 4-week duration of intrusive soil activities, with work being performed for 5 days per week,

for 10 hours per day. Derivation calculations of site-specific alert levels and action levels are included in Appendix F.

In each case, the analyte-specific AAC is greater than the National Ambient Air Quality Standard (NAAQS) for PM₁₀ for a 24-hour average period (150 micrograms per cubic meter [ug/m³]). This standard is based on potential adverse health impacts due to the inhalation of particulates in this size range. Accordingly, as a conservative measure, the dust action level is set at 150 micrograms per cubic meter (ug/m³) and the alert level has been set at 100 ug/m³.

If the ambient air concentration of particulates at the downwind perimeter of the work area exceeds 100 ug/m³ above upwind background conditions for the 15-minute average, or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. The contractor will immediately implement mitigation control measures to abate the emissions and reduce levels to below the alert level. Work will continue with dust suppression techniques provided that the downwind particulate concentration does not exceed 150 ug/m³ above the upwind background conditions, and provided that no visible dust is migrating from the work area.

Baseline monitoring will be conducted for three days prior to remedial activities to establish pre-excavation concentrations of particulates. The baseline monitoring will be performed at real-time air monitoring stations for three days prior to excavation. One ambient air sample will also be collected prior to remediation activities to identify pre-excavation ambient air concentrations on a chemical-specific basis. Baseline monitoring will be performed during a time period that will be representative of the anticipated excavation schedule.

If conditions are encountered at other portions of the property that indicate a release of hazardous material to the environment has occurred that requires remediation under the MCP, the RAM Plan will be modified to include the additional areas, and the air monitoring procedures described in this section will be applied at the additional remediation areas.

7. Permits (310 CMR 40.0444[1][f])

Remediation Waste will be transported off the Site under BOLs or hazardous waste manifests. Toll Brothers will sign all BOLs and/or manifests as the generator in accordance with 310 CMR 40.0034 and 40.0035.

Wetland areas are located within the proposed Seaside at Scituate development area. Wetland areas have been identified within 100 feet of the AOCs. Permits have currently been filed with the Town to temporarily disturb and restore wetland areas that will be affected by excavation prior to and during construction.

8. Limitations

This report was prepared for the use of Toll Brothers, Inc., and MassDEP, exclusively. The conclusions presented in this report are based solely on the information reported in this document. Additional information regarding the Site not available to GEI at the time this report was prepared – may result in a modification of the findings above. The report has been prepared in accordance with generally accepted hydrogeological practices. No warranty, expressed or implied, is made.

9. References

CHA (2014). ASTM Phase II Environmental Site Assessment, Former Proving Grounds, Hatherly Road, Scituate, Massachusetts, April 21, 2014.

WE (2011). Class A-2 Response Action Outcome Statement, 50-Acres Between Tilden and Hatherly Roads (aka Former Scituate Proving Grounds), 137 Hatherly Road, Scituate, Massachusetts, December 21, 2011.

MassDEP RTN 4-18143
DRAFT Release Abatement Measure Plan **Modification**
Former Scituate Proving Ground, 137 Hatherly Road,
Scituate, Massachusetts
December X, 2017

Figures

MassDEP RTN 4-18143
DRAFT Release Abatement Measure Plan **Modification**
Former Scituate Proving Ground, 137 Hatherly Road,
Scituate, Massachusetts
December X, 2017

Appendix A

MassDEP Transmittal Form

MassDEP RTN 4-18143
DRAFT Release Abatement Measure Plan **Modification**
Former Scituate Proving Ground, 137 Hatherly Road,
Scituate, Massachusetts
December X, 2017

Appendix B

Public Notice Letters

Appendix C

CHA Phase II Data Tables

Appendix D

CHA Phase II Figures

Appendix E

Letter Certifying Financial Resources

Appendix F

Derivation of Particulate AACs